

Thomas A. Edison

BY

DONALD McNICOL

The Edison Centennial in 1947 is an occasion of significance to communications and electronic engineers. Some pertinent highlights in Edison's career are presented in the following summary by an eminent engineer and historian in the communications field, who is himself a former President of The Institute of Radio Engineers.

The Editor

In published biographies of Thomas A. Edison, the situation at the time of establishing his shop in Newark, New Jersey, is not clarified as to how a twenty-four-year-old telegrapher could manage to finance an electrical plant of considerable size. Latter-day, practical-minded engineers wonder about this. The fact is that young Edison had just been awarded some forty thousand dollars by telegraph companies for the stock-ticker and quadruplex inventions, and with old-fashioned caution, Edison had stipulated that part of the money be paid to him each month over a year or two. It was this money that financed the Newark payroll, paid the rent and cost of recently introduced Sprengel air pumps, tangent galvanometers, and other instruments for laboratory uses. The Newark shop was mainly a laboratory, little manufacturing being done there. When Edison reached the age of twenty-nine, the shop was moved to Menlo Park, New Jersey, and larger quarters. There the electric light, the phonograph, and other inventions were launched for commercial promotion.

Mr. Edison was not given to writing about his work but was an avid reader of the writings of others; and in view of the great things he accomplished it is of interest to note the names of some of his contemporaries, all of whom achieved fame in electrical work. Alexander Graham Bell and E. J. Houston were the same age as Edison. Workers who were a few years older than Edison included Moses G. Farmer, Elisha Gray, George B. Prescott, Henry S. Carhart, and A. E. Dolbear. Henry A. Rowland, Francis Blake, and Elihu Thomson were a few years younger than Edison. About the time the electric-lighting problems developed, F. B. Badt was brought from Germany as a mathematician. It was not until 1880 that engineering schools included electrical courses.



Thomas A. Edison with models of his Edison-effect lamps which he invented in 1883.

There were two occasions when Edison wandered close to the borderline of radio discovery. When he was twenty-eight he noted spark effects in metallic systems a distance of about eight feet from a vibrating circuit-interrupter which also was producing sparks. No one present knew the cause of the phenomenon, but Edison had the prescience to tag the effect as *etheric force*. Had Maxwell's treatise of two years earlier been digested, very likely the errant sparks would have been pursued to their lair, and Hertz anticipated.

The other occasion occurred in 1883, when Edison was bothered by dark deposits on the inner glass surface of the early incandescent lamps, the negative side of the filament being the offender. But that was five years before Hertz, and thirteen years before the electron was identified by others. However, always a believer in patent protection, Edison filed an application, and the elusive phenomenon gained fame as the *Edison effect*.